

Remarks:

The above amendments and these remarks are responsive to the Office action dated April 18, 2006.

At present, claims 1, 3, 7-12 and 15-41 are pending in the application. All claims stand rejected under 35 U.S.C. §103(a) based on Sabonis (US 6,022,101) variously in view of Scheffelin et al. (US 5,675,367), Baringa (US 5,721,576), Childers (US 6,116,723) and/or Needham (US 4,658,268).

Applicants traverse the foregoing rejections for at least the reasons set forth in the remarks below, and request reconsideration of the application under 37 C.F.R. § 1.111 and allowance of the pending claims.

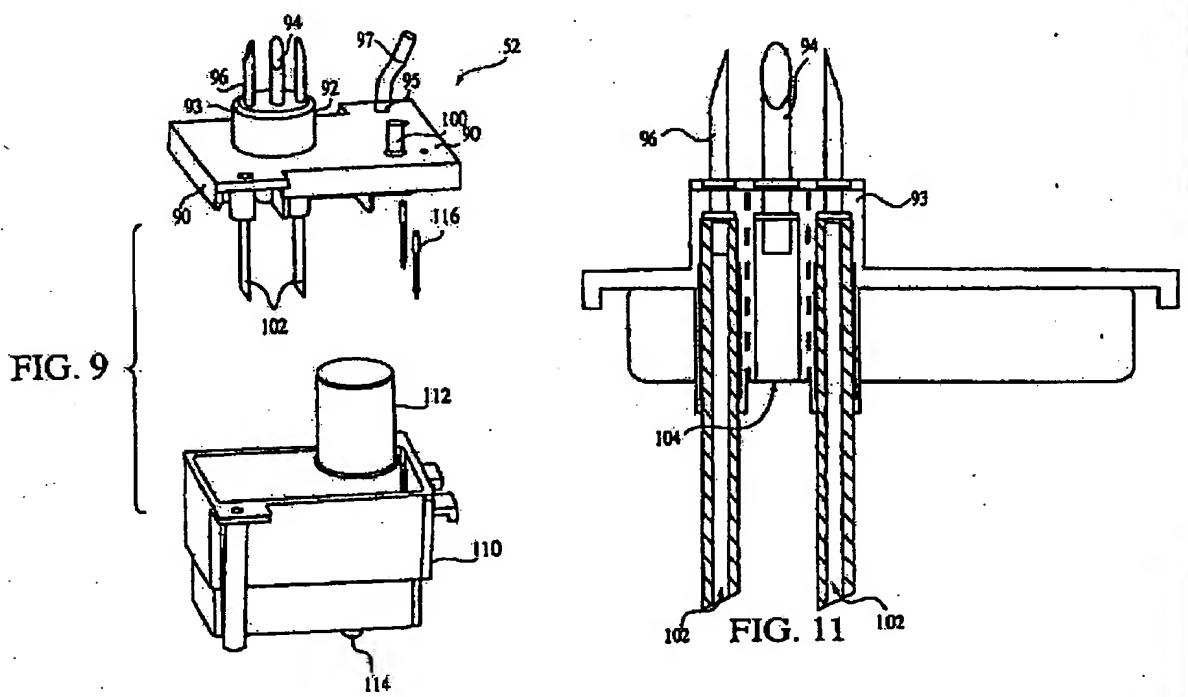
Rejections under 35 USC § 103

As noted above, all claims stand rejected under 35 U.S.C. §103(a). In particular, claims 1, 3, 7, 8, 12, 15, 16, 18-20, 30, 31 and 38-40 stand rejected based on Sabonis in view of Scheffelin et al. Claims 9-11, 26, 29 and 32-34 stand rejected based on Sabonis and Scheffelin et al., and further in view of Baringa. Claims 17, 21-25, 27, 28 and 35-37 stand rejected based on Sabonis and Scheffelin et al., and further in view of Childers. Claim 41 stands rejected based on Sabonis and Scheffelin et al., and further in view of Needham.

Sabonis discloses an ink delivery system including plural ink stations, each with an ink bottle positioned over an ink reservoir (52). According to Sabonis, the ink reservoir employs needles that penetrate a septum in the ink bottle, "to allow ink to flow into the reservoir." More particularly, Sabonis proposes an ink reservoir having a

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reservoir container (110) and a cover (90) with a protruding cylindrical boss (92). Hollow ink cannulas (96) and a hollow air cannula (94) extend upwardly from cylindrical boss (92), acting as the aforementioned needles for use in filling ink reservoir (52). Such ink reservoir is depicted in Figs. 9-14 of Sabonis, Figs. 9 and 11 being reproduced below for purposes of these remarks:



As should be apparent from the above drawing figures (with particular reference to Fig. 11), ink cannulas (96) and air cannula (94) all terminate in protruding cylindrical boss (92), and thus do not extend into reservoir container (110). Furthermore, it will be appreciated that lid (90) is not substantially planar inasmuch as cylindrical boss (92) protrudes substantially from the upper surface of the lid.

In operation, an ink bottle is placed above ink reservoir (52) such that the ink and air cannulas pierce a septum of the ink bottle, thereby allowing ink to flow (via gravity) into reservoir container (110) through ink cannulas (96). Air flows out of reservoir container (110) and into the ink bottle via air cannula (94) until the ink level within the container reaches a predetermined level, after which air flow to the container is "shut off" (column 6, lines 2-15). There is no flow of ink out of the reservoir container through ink cannulas (96), or of air into the reservoir containers via air cannula (94) as this would be opposite to the intended operation of ink reservoir (52).

As noted by Sabonis, ink flows out of reservoir container (110) through outlet (114). Air flows into reservoir container (110) through vent (95). The ink and air cannulas must remain upright, and must be kept in careful equilibrium in order to prevent overfilling of the reservoir container. As will be described further below, the Examiner's proposed modifications to Sabonis (providing for bi-directional flow of air and ink through the air and ink cannulas, and re-orienting the air and ink cannulas to provide for lateral insertion of the ink reservoir) would render the Sabonis ink reservoir ineffective for its intended purpose, and thus are inappropriate.

As previously amended, claim 1 recites "[a] printing-fluid container, comprising: an off-axis printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein, the printing-fluid reservoir having a substantially planer unitary leading edge; a printing-fluid interface on the leading edge and extending into the reservoir and configured to move printing fluid into and out of the printing-fluid reservoir; and an air-interface on the leading edge and extending into the reservoir and

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configured to move air into and out of the printing-fluid reservoir in response to the movement of the printing-fluid into and out of the reservoir." Contrary to the Examiner's assertions, Sabonis does not disclose or suggest "a substantially planer unitary leading edge" and does not disclose or suggest a printing-fluid interface and an air interface that "extend[] into the reservoir." As noted above, the ink and air cannulas (which the Examiner characterizes as printing-fluid and air interfaces) terminate in the protruding cylindrical boss (of Sabonis), outside of the reservoir container (of Sabonis).

Furthermore, as acknowledged by the Examiner, Sabonis does not teach a printing-fluid container with a liquid interface that moves fluid into and out of the printing-fluid reservoir and an air interface with an air interface that moves air into and out of the printing fluid reservoir. The Examiner thus cites Scheffelin et al., proposing that Sabonis be modified to accommodate bidirectional flow through the air and ink cannulas. However, such a modification would render the air and ink cannulas inappropriate for their intended purpose of preventing overfill of the reservoir container.

As noted by Sabonis, the air flow into the ink bottle is shut off upon reaching a predetermined ink level within the reservoir container, thereby creating a vacuum in the ink bottle that limits the flow of ink into the reservoir container. If bi-directional airflow were permitted, no such vacuum would exist, and ink would overflow the reservoir container. Furthermore, applicant notes that Sabonis specifically calls for maintaining the air cannula beneath the surface of the ink in the ink bottle, or (if a standpipe is employed, as shown in Figs. 20 and 21) employing a one-way valve (204) that prevents air from traveling into the ink reservoir through air cannula (94). The proposed

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modification of Sabonis to accommodate bi-directional airflow through the air cannula thus is contrary to the teachings of Sabonis.

Claim 1 is allowable over Sabonis in view of Scheffelin et al. for at least the foregoing reasons, and the rejection of claim 1 based on Sabonis and Scheffelin et al. should be withdrawn. Claims 3 and 7-11 (claims 9-11 stand rejected based on Sabonis and Scheffelin et al., and further in view of Baringa) depend from claim 1, and thus are allowable for at least the same reasons as set forth with respect to claim 1.

Claim 12 recites “[a] printing-fluid container, comprising: an off-axis printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein, the printing-fluid reservoir having a leading edge configured for lateral insertion into a printing system; a printing-fluid interface on the leading edge of the printing-fluid reservoir and extending into the reservoir, wherein the printing-fluid interface is configured to output printing fluid from the printing-fluid reservoir during a first mode of operation and is configured to input printing fluid into the printing-fluid reservoir during a second mode of operation; and an air-interface on the leading edge of the printing-fluid reservoir and extending into the reservoir, wherein the air-interface is configured to regulate pressure within the printing-fluid reservoir by inputting air into the printing-fluid reservoir during the first mode of operation and by outputting air from the printing-fluid reservoir during the second mode of operation.

As noted generally above with respect to claim 1, Sabonis does not disclose or suggest an air interface (or a printing-fluid interface) extending into the reservoir. Furthermore, Sabonis does not disclose or suggest an air interface configured to

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regulate pressure within the printing-fluid reservoir by inputting air into the printing-fluid reservoir during the first mode of operation and by outputting air from the printing-fluid reservoir during the second mode of operation. In fact, as noted above, Sabonis specifically calls for preventing flow of air from into the reservoir container by employing a one-way valve (204) (see, Figs. 20 and 21 of Sabonis). Modification of Sabonis to provide for bi-directional airflow (as proposed by the Examiner) thus is contrary to the teachings of Sabonis.

Claim 12 also recites bi-directional printing fluid flow through a printing fluid interface, and placement of the air interface and printing-fluid interface on a leading edge configured for lateral insertion into a printing system. Modification of the Sabonis ink reservoir to accommodate such lateral insertion would render the ink reservoir inoperable.

For at least the foregoing reasons, claim 12 is allowable over the cited references, and the rejection of claim 12 based on Sabonis in view of Scheffelin should be withdrawn. Claims 15-32 (claims 17, 21-25, 27 and 28 are rejected based on Sabonis and Scheffelin et al. in view of Childers; claims 26, 29 and 32 are rejected based on Sabonis and Scheffelin et al. in view of Baringa) depend from claim 12, and are allowable for at least the same reasons as claim 12.

Claims 33-34 recite a ball and septum printing-fluid interface and a ball and septum air interface vertically aligned on an upright leading edge of a printing fluid reservoir. Neither Sabonis, Scheffelin et al., nor Baringa disclose or suggest such an arrangement. Furthermore, modification of Sabonis to align the printing-fluid interface

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and the air interface vertically would render Sabonis inoperable inasmuch as the Sabonis air cannula (94) would no longer be configured to shut off air flow when the reservoir container is full.

For at least the foregoing reasons, claim 33 is allowable over Sabonis, Scheffelin et al. and Baringa, and the rejection of claim 33 should be withdrawn. Claim 34 depends from claim 33, and thus is allowable for at least the same reasons as claim 33. The rejection of claim 34 thus also should be withdrawn.

Claim 35 (and its dependent claims, 36 and 37) recites means for regulating pressure within reservoir means by laterally inputting air into the reservoir during a first mode of operation and by laterally outputting air from the reservoir means during a second mode of operation. As noted generally above, this is contrary to the teachings of Sabonis, which calls for a one-way valve (204) configured to prevent flow of air into the reservoir container. The Examiner's proposed modification of Sabonis thus is inappropriate, and for at least this reason, the rejection of claim 35 (and claims 36 and 37) should be withdrawn.

Claim 38 (and its dependent claims, 39-41) recites "allowing air to enter the reservoir through the air-interface during a first mode of operation" and "allowing air to exit the reservoir through the air-interface during a first mode of operation." As noted above, Sabonis specifically prevents such bi-directional airflow. Accordingly, for at least the foregoing reasons, the rejection of claim 38 (and claims 39-41) should be withdrawn.

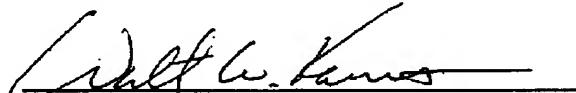
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Conclusion

Applicants believe that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, applicants respectfully request that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to Examiner L. Martin, Group Art Unit 2853, Assistant Commissioner for Patents, at facsimile number (571) 273-8300 on July 18, 2006.



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